

附件 X
Appendix X

耐特菲姆滴灌产品安装/使用及水肥管理的注意事项
Notices for Installation/Use of Netafim Drip Irrigation Products and Management of Water and Fertilizer

滴灌技术具有显著节水、节能、节地、节省劳动力、适应性强以及保持水土的优势。然而，相较于传统灌溉产品，滴灌产品存在内部流道较小、易堵塞、易受外力损伤等特点。因此，为确保滴灌产品和系统的正常运作及其在水肥管理中的功效，安装和使用滴灌产品时，请务必严格遵守以下注意事项：

Drip irrigation technology has advantages of water saving, energy saving, land saving, labor-saving, strong adaptability, and soil and water conservation. However, compared with traditional irrigation products, drip irrigation products have the characteristics of smaller internal flow channel, easy to clog, vulnerable to external damage and so on. Therefore, in order to ensure the proper operation of drip irrigation products and systems and their effectiveness in water and fertilizer management, please strictly observe the following notices when installing and using drip irrigation products:

1. 对已安装管道的处理

Treatment of Installed Pipeline

在安装滴灌系统及铺设或安装滴灌产品前，应对已安装的管道进行冲洗，以防杂质进入下游滴灌产品。

Prior to installation of drip irrigation system and laying or installation of drip irrigation products, the installed pipeline should be flushed to prevent entry of impurities into downstream drip irrigation products.

2. 铺设毛管注意事项

Notice on the Laying of the Capillary Pipe

铺设毛管时需防止外部尖锐物体对其造成损伤；若使用机械铺设，请使用耐特菲姆的专用导轮及导管装置。

When laying the capillary pipe, the damage caused by sharp external objects shall be prevented. If laying the capillary pipe by machine, the special guide wheel and guide pipe device of Netafim shall be used.

3. 保持橙色条纹朝上

Keep the Orange Stripe Heading Up

铺设耐特菲姆的滴灌管时，请将滴头两侧的橙色条纹朝上，确保滴头出水口朝上，以防杂物堵塞。

When laying the drip irrigation pipe of Netafim, please emitter on both sides of the orange stripe upward, to ensure that the emitter water outlet upward, in case of debris block.

4. 地下害虫、啮齿类动物、植物根系防范

Guarding Against Underground Insect Pests, Rodents, and Plant Roots

使用过程中，需注意防范地下害虫或其他啮齿类动物及植物根系对滴灌产品的破坏。

In the process of use, attention shall be paid to guarding against the damage to drip irrigation products caused by underground insect pests, other rodents or the roots of plants.

5. 灌溉水质检测与处理

Inspection and Treatment of Irrigation Water Quality

在使用滴灌系统前，请先对灌溉用水（水源）进行检测，了解水质情况。重点检测如下：

Before using the drip irrigation system, please have the irrigation water (water source) inspected first to learn about the water quality. The key inspections are as follows:

- (1) 固体悬浮物、砂石、粉粒含量：避免物理堵塞；
Content of solid suspension, sand and gravel, powder: physical blocking shall be avoided;
- (2) 永久硬度、铁离子、锰离子含量：防止化学结晶或氧化生成固体杂质，避免滴头堵塞。
Permanent hardness, content of iron ions and manganese ions: to prevent solid impurities from being generated by chemical crystallization or oxidation, and to avoid clogging of the drip tip.

请根据水源检测结果，选择合适的过滤设备，确保对水源进行有效处理，并确保其在系统工作时正常运行。若水源中含有大量细小淤泥、有机颗粒等难以滤除的悬浮杂质，还应建设适当容积的沉淀设施。

According to the inspection results, select the appropriate filtration equipment to ensure the effective treatment of the water and ensure the normal operation of the system. If the water contains a large number of small silts, organic particles and other suspended impurities that are difficult to filter, shall also to build appropriate capacity of sedimentation facilities.

6. 水肥一体化之施肥操作

Fertilization Operation of Integrated Water and Fertilizer

使用全水溶性固体或液体肥料，稀释使用时应采用二次稀释法：

Fully water-soluble solid or liquid fertilizers are used, and a secondary dilution method shall be adopted when diluted:

- (1) 将肥料在 A 罐/桶中充分搅拌至完全溶解；
The fertilizers are sufficiently stirred in A tank/barrel until they are completely dissolved;
- (2) 将 A 罐/桶的母液输送至 B 罐/桶，确保肥料彻底溶解后，再注入滴灌系统。
The mother liquor in A tank/barrel is transferred to B tank/barrel, ensure that the fertilizers are completely dissolved, and then injected them into the drip irrigation system.

7. 使用生物有机肥或生物菌肥之注意事项

Notices for Using Bio-organic Fertilizers or Bio-bacterial Fertilizers

当使用如含氨基酸、腐植酸、或酵素发酵液等生物有机肥/生物菌肥时，必须先进行溶解性实验，确保肥料完全溶解后再使用。

When using bio-organic fertilizers/bio-bacterial fertilizers such as those containing amino acids, humic acid, or enzyme fermentation solution, a solubility test must be conducted in advance to ensure that the fertilizers are completely dissolved before using.

特别注意：生物有机肥应单独使用，禁止与其他肥料混合使用。

Special Note: Bio-organic fertilizers shall be used separately and shall not be mixed with other fertilizers.

8. 肥料兼容性检查

Fertilizer Compatibility Inspection

在混合使用不同肥料时，确认其兼容性，避免不同元素肥料之间产生化学反应造成堵塞。

When mixing different fertilizers, confirm their compatibility to avoid chemical reactions between different elemental fertilizers that may cause clogging.

特别注意：在肥料溶液 pH 值较低时，钙、镁肥料溶液不得与磷酸盐或硫酸盐肥料溶液混合使用。

Special Note: Calcium and magnesium fertilizer solutions should not be mixed with phosphate or sulfate fertilizer solutions when the pH value of the fertilizer solution is low.

9. 避光处理

Light-sheltered Treatment

为防止见光后大量滋生微生物而导致滴灌系统堵塞，施肥罐/桶需采取避光措施。

Fertilizer tanks/buckets should be protected from light to prevent microbial blooms that may lead to blockage of drip irrigation systems.

10. 肥料罐/桶配置建议

Suggestions for Fertilizer Tank/Barrel Configuration

使用 2 个或更多肥料罐/桶，分别用于存放不兼容的肥料。

Use 2 or more fertilizer tanks/buckets, each for storing incompatible fertilizers.

- (1) 一个罐/桶用于单独放置钙肥、镁肥及其他微量元素肥；

One tank/bucket for separate storage of calcium, magnesium and other trace element fertilizers;

- (2) 另一个罐/桶用于放置磷酸类或硫酸类肥料。

The other tank/bucket for storage of phosphoric acid or sulfuric acid fertilizers.

11. 铁质施肥罐的防腐蚀措施

Anti-corrosion Measures for Iron Fertilizer Tanks

确保铁质施肥罐内部已喷涂防腐漆，避免因硫酸根及硝酸根等肥料与铁质内壁直接接触而引起铁离子溶解进入滴灌系统，造成堵塞。

Ensure that the interior of iron fertilizer tank is coated with anti-corrosion paint to avoid direct contact between fertilizers such as sulfate and nitrate ions and the iron inner wall, which may cause iron ions to dissolve and enter the drip irrigation system, resulting in clogging.

12. 过滤器安装

Filter Installation

在施肥罐/桶出口处，需安装耐腐蚀的过滤器，确保系统顺畅运行。

A corrosion-resistant filter shall be installed at the outlet of the fertilizer tank/bucket to ensure smooth operation of the system.

13. 系统压力管理

System Pressure Management

系统工作时，确保滴灌管末端及滴头的压力在正常工作压力要求范围内，避免因压力过大导致毛管破裂，或压力过低、流量过小导致肥料残渣或杂质沉积。

During operation of the system, the pressure at the end of the drip irrigation pipe and the emitter shall be within the required normal working pressure range to avoid capillary breakage due to too high pressure or deposition of fertilizer residues or impurities due to too low pressure or too low flow rate.

14. 水溶性肥料选择

Selection of Water-soluble Fertilizers

建议购买水溶性好的肥料，并认准肥料包装袋上的执行标准，参考如下：

It is recommended to purchase fertilizers with good water solubility and identify the execution standards on the fertilizer packaging bags as follows:

产品 Products	执行标准 Execution Standard	产品 Products	执行标准 Execution Standard
大量元素水溶肥 Macroelement soluble fertilizer	NY1107-2010	含氨基酸水溶肥 Amino acid fertilizer	NY1429-2010
中量元素水溶肥 Middle element soluble fertilizer	NY2266-2012	含腐殖酸水溶肥料 Humic acid fertilizer	NY1106-2010
微量元素水溶肥 Micronutrient soluble	NY1428-2010		

fertilizer			
------------	--	--	--

15. 冲洗系统

Flushing System

每次施肥结束后，系统需持续灌溉清水 20-30 分钟，以冲洗管道中的残留肥料，避免造成肥料浪费和肥料沉积后滴灌系统堵塞。

After each fertilization, the irrigation system should be irrigated with clean water for 20- 30 minutes to clean the residual fertilizer in the pipe and avoid fertilizer waste and blockage of the drip irrigation system.

16. 定期维护

Regular Maintenance Measures

在使用过程中，根据系统特点与应用场景，需定期采取适宜的维护措施，如过滤设备的冲洗、各级管道和毛管的冲洗等；必要时，还应注酸或氧化剂进行管道和设备的清洁。

During the use, appropriate maintenance measures shall be taken regularly based on the characteristics and application scenarios of the system, such as washing the filtering equipment, pipes and capillary pipes at all levels, etc.; if necessary, the pipes and equipment shall be cleaned by injecting acid or oxidizing agent.

17. 灌溉季前后维护

Maintenance Before and After the Irrigation Season

灌溉季结束和开始前，应对滴灌系统的各组成部件进行合理地维护；如需更换或修补组件和管道，需确保没有杂物进入滴灌系统导致堵塞。

The components of the drip irrigation system should be reasonably maintained before the start and the end of the irrigation season; if any components or pipes need to be replaced or repaired, please ensure that no debris enters the system and causes clogging.

作为全球灌溉产品和设备供应商，耐特菲姆的滴灌产品均满足 ISO9261 的制造标准与质量要求。在安装和使用滴灌产品和水肥管理的过程中，若因未遵守上述注意事项、外力损伤、不可抗力事件、恶劣天气等原因造成故障、损坏、堵塞或阻塞等情况，不在耐特菲姆滴灌产品的质保范围内（详见“耐特菲姆质保条款”）。

As a global supplier of irrigation products and equipment, Netafim's drip irrigation products all meet to ISO9261 manufacturing standards and quality requirements. During the installation and using of drip irrigation products and water and fertilizer management, if the failure or damage is caused by failure to observe the above notices, external force injury, force majeure events, bad weather, etc., shall be excluded from the warranty coverage of Netafim drip irrigation products (see the "Warranty Terms of Netafim" for more details).

如有任何疑问，请咨询耐特菲姆专业人士。

If there is any question, please consult Netafim experts.